



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/574,383

03/31/2006

Hironari Akashi

MAT-8823US

2319

52473

7590

08/25/2008

RATNERPRESTIA

P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

BAYOU, AMENE SETEGNE

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

08/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,383	<b>Applicant(s)</b> AKASHI ET AL.	
	<b>Examiner</b> AMENE S. BAYOU	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/01/07,09/12/07,03/31/06</u> .                              | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. Figure 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (which also is admitted by the applicant as conventional art). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 10 is objected to because of the following informalities: Claim 10 recites "an peripheral surface". The phrase should be replaced by phrases such as "a peripheral surface" or "the peripheral surface". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action.

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 11, 12 are rejected under 35 U.S.C. 102(b) as being unpatentable over Tamura et al. (US patent number 6547538).

Art Unit: 3746

5. In re claim 1, Tamura et al. '538 disclose an electric compressor including:
- A hermetic compressor, in figure 1, comprising: a hermetic container (51); a motor element (53) accommodated in the hermetic container (51); and a compressing element (52) that is accommodated in the hermetic container (51) and driven by the motor element (53), wherein the compressing element (52) has a shaft including an eccentric shaft (56) and a main shaft (54), and a main bearing (57) for pivoting the main shaft (54), the motor element is a bipolar permanent magnet motor (column 4, lines 37-38) that has a stator (67) and a rotor (55), the rotor (55) having a built-in permanent magnet (figure 2) in a rotor core (68), a hollow bore (69) is formed at an end on the compressing element side of the rotor core, and a wide magnetic path (figure 2 and column 7, lines 58-67) is provided to smooth flow of magnetic flux by the permanent magnet.
6. In re claim 11, Tamura et al. '538 disclose an electric compressor including:
- The motor element is a self-starting permanent magnet synchronous motor (column 2, lines 16-17), the motor element has many conductor bars (71) of a cage conductor for start on the outer periphery of the rotor core, and the permanent magnet (70a) is disposed in the inner peripheral side of the conductor bars, in figure 3.
7. In re claim 12, Tamura et al. '538 disclose an electric compressor including:
- The permanent magnet (70a, 70b) is a rare-earth magnet, in figure 2 and column 5, lines 1-3.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-10,13-18 are rejected under 35 U.S.C 103(a) as being unpatentable over Tamura et al. 538 in view of Kojima et al. (US patent publication number 2004/0191094).

10. In re claim 2 Tamura et al. 538 disclose the claimed invention except:

- Axial length of the rotor core is longer than axial length of a stator core of the stator, hence the wide magnetic path is provided to smooth the flow of the magnetic flux by the permanent magnet

However, Kojima et al.'094 teach an electric compressor including:

- Axial length of the rotor core (315) is longer than axial length of a stator core (113) of the stator, hence the wide magnetic path is provided to smooth the flow of the magnetic flux by the permanent magnet, in figure 3.

11. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the compressor of Tamura et al. 538 by making the axial length of the rotor core longer than the stator core as taught by Kojima et al.'094 in order to reduce the size of the compressor.

12. In re claim 3, Tamura et al. 538 in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

Art Unit: 3746

- Both axial ends of the rotor core (115) are disposed outside both axial ends of the stator core (113), respectively, in figure 1.

13. In re claim 4, Tamura et al. 538 in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

- Axial length of the permanent magnet (115a) is shorter than axial length of the rotor core (115), in figure 1.

14. In re claim 5, Tamura et al. 538 in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

- Axial length of the permanent magnet (115a) is shorter than axial length of the rotor core (115), and the permanent magnet covers a region having no bore in the axial direction of the rotor, in figure 1.

15. In re claim 6, Tamura et al. 538 in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

- The rotor core (315) has a cylindrical through hole having a first diameter into which the shaft (104) is inserted, the bore is a cylindrical recessed part that is formed in the upper part of the through hole and has a second diameter (306) larger than the first diameter (i.e. the diameter that fits shaft 104) ,the permanent magnet (315a) has an axial length shorter than the axial length of the rotor core

Art Unit: 3746

(315) , and covers a region of the first diameter in the rotor in an axial direction of the rotor core, in figure 3 and 4.

16. In re claim 7, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention:

Kojima et al.'094 disclose:

- The main bearing (120), in figure 3, is made of magnetic material (paragraph [0039]), and the wide magnetic path is provided (i.e. due to the fact that axial length of the rotor core is longer than axial length of a stator core of the stator as shown in figure 3 and also discussed in claim 2 above) to smooth the flow of the magnetic flux by the permanent magnet.

17. In re claim 8, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention:

Kojima et al.'094 disclose:

- The main bearing (120) is one of a casting and a molded product that is made of iron- based sintered material, in paragraph [0039]). Please note that In accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please also note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e., the main bearing,

Art Unit: 3746

does not depend on its method of production, i.e. ----. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

18. In re claim 9, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention except mentioning that the axial length of the bore is 1/3 of axial length of the rotor core or more. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper axial length of the bore based to get the practical compressor size, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

19. In re claim 10, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention except mentioning that the clearance between the surface of the bore and the Outer diameter of the main bearing is 0.5 to 3 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper clearance based on design parameters, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

20. In re claim 13, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention except mentioning that the axial length of the bore is 1/3 of axial length of the rotor core or more. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper axial length of the bore based to get the practical compressor size, since it has



been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

21. In re claim 14, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention except mentioning that the clearance between the surface of the bore and the Outer diameter of the main bearing is 0.5 to 3 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper clearance based on design parameters, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

22. In re claim 15, Tamura et al. 538 in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Tamura et al. 538 disclose:

- The motor element is a self-starting permanent magnet synchronous motor (column 2, lines 16-17), the motor element has many conductor bars (71) of a cage conductor for start on the outer periphery of the rotor core, and the permanent magnet (70a) is disposed in the inner peripheral side of the conductor bars, in figure 3.

23. In re claim 16, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention:

Tamura et al. 538 disclose:

Art Unit: 3746

- The motor element is a self-starting permanent magnet synchronous motor (column 2, lines 16-17), the motor element has many conductor bars (71) of a cage conductor for start on the outer periphery of the rotor core, and the permanent magnet (70a) is disposed in the inner peripheral side of the conductor bars, in figure 3.

24. In re claim 17, Tamura et al. 538 in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Tamura et al. 538 disclose:

- The permanent magnet (70a, 70b) is a rare-earth magnet, in figure 2 and column 5, lines 1-3.

25. In re claim 18, Tamura et al. 538 in view of Kojima et al. '094 disclose the claimed invention:

Tamura et al. 538 disclose:

- The permanent magnet (70a, 70b) is a rare-earth magnet, in figure 2 and column 5, lines 1-3.

### ***Conclusion***

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-

Art Unit: 3746

8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746